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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CADUGAN, ERICA E

ART UNIT	PAPER NUMBER
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3722

DATE MAILED: 10/22/2002

22

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/147,398	Applicant(s) KAULE ET AL.	
	Examiner Erica E Cadugan	Art Unit 3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18,20-22,24,28-33,36-40 and 42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18,20-22,24,28-33,36-40 and 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>22</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Faxing of Responses to Office Actions

1. In order to reduce pendency and avoid potential delays, TC 3700 is encouraging FAXing of responses to Office Actions directly into the Group at (703) 872-9302 or, for responses after final rejection only, to (703) 872-9303. This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into TC 3700 will be promptly forwarded to the examiner.

Claim Rejections - 35 USC § 112

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-18, 20-22, 28-29, 36-40, and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-18, 20-22, 28-29, 36-40, and 42 are replete with instances that do not particularly point out and distinctly claim the subject matter of applicant's invention. Examples of these instances are listed below, but these instances are not limited to the listed examples. Applicant is advised to closely review the claims for other occurrences.

In claim 1, it is unclear as claimed what is meant by "calculating a tool track", i.e., it is unclear what feature or aspect of the track is being "calculated".

Art Unit: 3722

There are positively recited limitations that lack sufficient antecedent bases in the claims. Examples of this are: "the engraving tool", in claim 1, line 4. Note that this list is not meant to be all-inclusive. Applicant is advised to closely review the claims for other similar occurrences.

In claim 3, it is unclear what is meant by "a single line of a line original" as set forth in the claim. Note that the contours shown in applicant's figures have more than one side. It is further noted that it is unclear as claimed how the "line original" is related to the rest of the claim elements.

The term "several" in claim 20 is a relative term which renders the claim indefinite. The term "several" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Examiner suggests using "plural" or "multiple" instead.

In claim 28, there is no frame of reference provided for determining to what the information is considered "additional".

Claim Rejections - 35 USC § 102/103

4. Claims 24 and 28-33, those of which were rejected under 35 USC 112 above are as best understood, are rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 2,210,923 (Jacquero et al) or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 2,210,923 (Jacquero et al.) in view of U.S. Patent No. 4,972,323 (Cauwet). The limitations in claim 24 that state "at least one engraved depression" and "an engraved defined roughness structure", the limitation in claim 28 that "the at least one depression comprises micro-engraving", and the limitations in claims 32 and 33 that also define how the substructure is "brought in", make it appear that the claims 24, 28-33, and 42 are product-by-process claims. As

Art Unit: 3722

described above, for a product-by-process claim, determination of patentability is based on the product itself and not its method of production.

Jacquero et al. teaches an intaglio printing plate 10 (page 2, left column, lines 38-42 and Figure 1) which has a depression 11 in the shape of a "one" which constitutes a line, which depression is shown in Figures 1-3 as having flanks and a bottom. Jacquero et al. also teaches that the printing plate 10 has "defined roughness structures" formed by the stipled formation 11a at least in the bottom of the depression, where the width of each of the stiples of the formation 11a is smaller than the depression 11 width (see Figures 1-3). It is noted that as the stiples exist and have edges, they are "defined". The stipled formation 11a defines a roughness, as shown in Figure 2. Specifically regarding claim 29, the layout of the stiples 11a is considered to be a "pattern". Specifically regarding claim 30, the stiples 11a are "machine-readable" in that they are "able" to be "read" by a machine such as a camera or a scanner. Specifically regarding claim 31, as each of the stiples shown in Figures 1-3 is recessed, they are considered to be grooves. Regarding claim 24, particularly note that along the edges of the "line" 11', there are stiples shown in Figure 3 as being connected to one another along a direction parallel to the flanks of the "line" 11'. Regarding the micro-engraving representing "additional information" set forth in amended claim 28, it is noted that as set forth in the claims, some portion of the stiples can be considered "micro-engraving" as there are no structural or functional differences presented in the claims between the roughness structure at the bottom of the depression and the micro-engraving in the depression. Note that whatever portion of the stiples would be called "micro-engraving" representing "additional information" in that they are "in addition" to the rest of the stiples. For example, the stiples in the base, i.e., the horizontal leg as viewed in Figure 1, of the "one" could

Art Unit: 3722

be considered “roughness structures” and the other stiples not in the base of the “one” could be considered “micro-engraving” as set forth in the claims. Regarding the way that the lines and the substructure were brought in, Jacquerod teaches that it is known to use “mechanical” cross hatching (page 1, left column, lines 10-24) to bring in a substructure, which inherently includes the use of a “mechanical chisel”. Specifically regarding claim 41, it is noted that the line itself, 11, 11’, is produced via an “incision” (page 2, left col., lines 39-40 for example), and thus is produced via an “engraving tool”, which tool would inherently have a width, which width would inherently have to be considered in order to produce a desired depression shape such as the number one shown in Figure 1. Without considering the tool width, a depression would be produced that may or may not be the size desired.

In the alternative, Cauwet teaches that it is known to use a “milling cutter, engraving chisel, laser emitter, electro-erosion tool, etc.” (column 2, lines 50-55) in an automatic engraver (column 1, lines 14-18) such that the tool chosen is suitable to the material being engraved (column 1, lines 14-18 and column 2, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have created the lines and stiples taught by Jacquerod et al. via engraving with a laser or a mechanical chisel, as taught by Cauwet, as these are known methods of material removal/engraving and as such are a design choice of the end user based on the material being worked.

5. Claims 24 and 28-33, those of which were rejected under 35 USC 112 above are as best understood, are rejected under 35 U.S.C. 102(b) as anticipated by U.S. Patent Re. 28,747 (Graboyes), or in the alternative, claims 24 and 28-31 are rejected under 35 U.S.C. 103(a) as being obvious over Graboyes and claims 32-33 are rejected under 35 USC 103(a) as being

Art Unit: 3722

obvious over Graboyes in view of U.S. Patent No. 4,972,323 (Cauwet). The limitations in claim 24 that state “at least one engraved depression” and “an engraved defined roughness structure”, the limitation in claim 28 that “the at least one depression comprises micro-engraving”, and the limitations in claims 32 and 33 that also define how the substructure is “brought in”, make it appear that the claims 24 and 28-33 are product-by-process claims. As described above, for a product-by-process claim, determination of patentability is based on the product itself and not its method of production.

Graboyes teaches a printing wheel 30 having platforms or plate portions 80 (Figures 3-4). Note that as shown in Figure 7, the removed area from the center of the land area 116 (of the “four”) is a depression. In as much as applicant’s described and shown depressions are “lines”, the depression constitutes a “line”. The depression area is machined out via rotating cutting tools (col. 3, lines 33-35) that follow a series of paths (see Figures 8-23) which extend “at least in partial areas parallel” to a direction of the depression. The depression has flanks 121 (shown in Figure 9) and a bottom (labeled in Figure 9 as element 112, for example). Note that as viewed in Figures 8-23, the tool tracks have defined roughness structures therebetween. Note that these structures form a “pattern”, for example, as set forth in claim 29 (Figures 8-23). Note that these structures are inherently “machine-readable information” as they are “able” to be read by a machine such as a camera or scanner. Regarding the claimed “micro-engraving”, it is noted that the tool tracks themselves are located within the depression, and represent “additional” information in that they represent different information than the defined roughness structures such as 134 (see Figure 13). For example, as viewed in Figure 14, there are shown plural portions from which the tool has removed material that are within the depression and that are

Art Unit: 3722

spaced by roughness structures, which portions can be considered a “pattern”. Regarding claim 31, alternatively note that one of the tool tracks, i.e., a groove, would constitute a “defined roughness structure” as these tool tracks are located at the base of material removed from the inner area of the depression (see Figures 8-23). Regarding claim 33, note that the rotating engraving tool constitutes a “mechanical chisel”. Regarding the preamble of these rejected claims which sets forth an “embossing or intaglio printing plate”, note that the other limitations of the claim are met by Graboyes as described above, and that there is no reason why the depression portion of the plate 80 of Graboyes printing wheel 30 could not be filled with ink and thus used as an intaglio plate.

Alternatively, regarding the “embossing or intaglio printing plate”, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have reversed the recessed and protruding portions of the plate such that the land 116 shown in Figure 7 were recessed into the surface 112, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. In re Einstein, 8 USPQ 167.

Regarding claims 32-33, in the alternative, Cauwet teaches that it is known to use a “milling cutter, engraving chisel, laser emitter, electro-erosion tool, etc.” (column 2, lines 50-55) in an automatic engraver (column 1, lines 14-18) such that the tool chosen is suitable to the material being engraved (column 1, lines 14-18 and column 2, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have to have created the “roughness structures” (or bases) taught by Graboyes via engraving with a laser or a mechanical chisel, as taught by Cauwet, as these are known methods of material

Art Unit: 3722

removal/engraving, and as such, the selection of one over the other is a design choice of the end user based on criterion such as the material being engraved as taught by Cauwet.

6. Claims 1-10, 12-14, 16-18, 21-22, and 37-40, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Re. 28,747 (Graboyes), or in the alternative, are rejected under 35 U.S.C. 103(a) as being obvious over Graboyes.

Relating Applicant's claim language to the method taught by Graboyes, Graboyes teaches a method for producing an embossing plate 80 (Figure 4) having a surface 116 with at least one depression (portion 85, see Figures 4 and 7, the area enclosed by the land 116) in the form of a line (in as much as applicant's described and shown depressions are "lines", the depression constitutes a "line") brought into the surface of the embossing plate, characterized in that the line defines a limited partial area of the surface, an edge of the partial area defining a contour (i.e., the edge of the aforescribed depression), wherein the method comprises the step of determining a tool track (several tool tracks are "determined", see Figures 8-24) located within the contour from the desired contour and from a predetermined desired depth of the depression (col. 10, lines 3-6, for example), the engraving tool 32, 34 being controlled along said track such that a material of said partial area is removed within the contour at the predetermined desired depth, said track being continuous along the contour of the area (Figures 8-24). Regarding claim 2, note that the desired contour is the contour of the area enclosed by the land 116 (Figure 4) and that the tool paths offset inwardly from this contour, so that each tool path has at least a portion that "extends contour-parallel to the desired contour" (Figures 8-24). Regarding claim 3, note that the corners of the area enclosed by the land 116 shown in Figure 7 are rounded and thus the contour is a continuous "single" line. Regarding claim 4, note that the claim does not state that

Art Unit: 3722

the actual depth varies, but merely sets forth that the desired depth is variable or “able” to be varied. Graboyes teaches a three-axis machining device that is capable of axially moving the tool (col. 3, lines 50-55). Regarding claim 5, note that each tool track is at a depth constant within that tool track (see Figures 8-24). Regarding claim 6, note that the material within the contour removed from the outermost track (for example) is removed by a “single” traverse. Regarding claims 7-8, any of the area within the desired area and not removed with the first track is “residual area”, and that there are plural offset tracks (Figures 8-24). Regarding claim 9, note that applicant, in the response filed November 15, 2001, set forth that a meander is “a winding path or course”, and that any of the tool tracks taught by Graboyes thus constitute a “meander-shape” as they “wind” or turn in multiple directions (see Figures 7-24). Regarding claim 10, see Figures 12 and 13 for example. Regarding claim 12, note that the tool paths get progressively deeper (see Figures 13, 15, 17, 19, 21, 23, and 24). Regarding claim 13, note that after plural “engraving steps”, a recognizable pattern is formed (Figure 7, col. 11, lines 36-41). Regarding claim 14, note that Graboyes teaches a console 36 that houses the numerical control program for the machine tool device 20 (col. 3, lines 30-50). The rotating engraving tools 32, 34 taught by Graboyes constitute “mechanical chisels” as set forth in claims 16-17. Regarding claim 18, note that tools 32 and 34 are different diameters (col. 5, lines 8-10). Regarding claim 37, Graboyes teaches that the “width” of the tool is “taken into account” before forming the desired contour (col. 10, lines 49-64, for example). Regarding claim 38, note that Graboyes teaches selecting a desired spacing of the steps, which would thus inherently produce a desired “roughness structure” (col. 10, lines 6-10). Regarding claim 39, see Figures 12-13, for example. Regarding the “embossing plate”, there is no reason that the depression of plate 80 of Graboyes printing

Art Unit: 3722

wheel 30 could not be filled with ink and thus used as an embossing plate. Regarding claim 22, note that in the further machining steps, i.e., the further tool tracks, that the tool cuts the flank 121 (Figure 24 for example).

Alternatively, regarding the “embossing plate”, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have reversed the recessed and protruding portions of the plate such that the land 116 shown in Figure 7 were recessed into the surface 112, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. In re Einstein, 8 USPQ 167.

Regarding claims 16-17, in the alternative, Cauwet teaches that it is known to use a “milling cutter, engraving chisel, laser emitter, electro-erosion tool, etc.” (column 2, lines 50-55) in an automatic engraver (column 1, lines 14-18) such that the tool chosen is suitable to the material being engraved (column 1, lines 14-18 and column 2, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have to have engraved as taught by Graboyes with a mechanical chisel, as taught by Cauwet, as these are known methods of material removal/engraving, and as such, the selection of one over the other is a design choice of the end user based on criterion such as the material being engraved as taught by Cauwet.

Claim Rejections - 35 USC § 103

7. Claim 15, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Re. 28,747 (Graboyes) as applied to claim 1 above, and further in view of U.S. Patent No. 4,972,323 (Cauwet). Graboyes teaches all aspects of the claimed invention as described in the above rejection based thereon, but does not teach that the engraving tool is a

Art Unit: 3722

laser. However, Cauwet teaches that it is known to use a “milling cutter, engraving chisel, laser emitter, electro-erosion tool, etc.” (column 2, lines 50-55) in an automatic engraver (column 1, lines 14-18) such that the tool chosen is suitable to the material being engraved (column 1, lines 14-18 and column 2, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have to have engraved as taught by Graboyes with a laser, as taught by Cauwet, as these are known methods of material removal/engraving, and as such, the selection of one over the other is a design choice of the end user based on criterion such as the material being engraved as taught by Cauwet.

8. Claims 20 and 36, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Re. 28,747 (Graboyes). Graboyes teaches all aspects of the claimed invention as described in the above rejection based thereon, and additionally teaches that Graboyes’ device 20 utilizes eight pairs of cutting tools for working on eight different workpieces simultaneously (col. 11, lines 13-18), but is silent as to the material of the workpiece and does not specify that a single workpiece is operated on simultaneously by “several” engraving tools. However, regarding the material of the workpiece, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the workpiece out of whatever material was desired or expedient, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. See also *Ballas Liquidating Co. v. Allied industries of Kansas, Inc.* (DC Kans) 205 USPQ 331. Regarding the “several” tools, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized “several” tools, since it has been held that

Art Unit: 3722

mere duplication of the essential working parts of a device involves only routine skill in the art.

St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

9. Claims 1-3, 5-11, 14, 16-18, 20, 36, and 37, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,949,270 (Shima et al.). Shima et al. teaches a device for and method of machining a pocket of a desired contour into a surface (column 1, lines 58-68, and column 2, lines 1-4), which constitutes a similar problem solving area to the instant invention. Shima teaches performing such machining at a predetermined depth of cut (column 1, lines 13-15). Shima teaches the use of a tool path 4 that is “intersection-free” as well as at least partially “contour-parallel” to the desired contour 1 (see Figure 16), and which tool path only requires one traverse of the tool (see Figure 16). Shima also teaches that it is known to use a tool path that removes residual area with a second tool track (Figure 13c) which removes material in tracks which are “contour-parallel” to the desired contour (Figure 13c). Alternatively, any time the tool “turns”, it could be said to create a new tool path (i.e., the second tool track as claimed in claim 7). For example, in Figure 13b, the tool path starts at the top going from right to left, which could constitute a first track, and then it proceeds to turn and move from top to bottom, which could constitute a second tool track. Shima also teaches that it is known to use a “meander” shaped tool path (see Figure 13b). Specifically regarding claims 10 and 11, when material is removed, a new surface having a roughness will be formed, and when the material is removed via a tool having any of the paths taught by Shima, the new surface will have grooves of one size or another. Specifically regarding claim 14, the desired contour is defined with the aid of a data processing system (column 2, lines 30-46). Specifically regarding claim 18, tools of different kinds or dimensions can be used, or it would not be necessary to

Art Unit: 3722

define the tool shape and diameter as described in column 3, lines 49-52. Note that as the tool diameter is being defined, the tool “width” is being “taken into account”. Shima et al. does not specifically teach that the method of cutting is used for an embossing plate, nor that several workpieces are machined simultaneously, nor that one workpiece is machined with several tools simultaneously, nor that the machining is performed with a rotating tool. However, the machining method taught by Shima et al. can be used to machine a pocket of a desired contour into any workpiece having an accessible surface. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the method of the present invention to machine a desired contour into a printing plate, since a printing plate is a workpiece with an accessible surface. Regarding the multiple workpieces or multiple tools, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized multiple workpieces or multiple tools, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Regarding the rotating tool, pocket machining or “end face finishing” (column 3, lines 25-30) requires a rotating tool in order to produce the quality of finish that characterizes a “finishing” operation.

10. Claims 4, 12, 13, 15, and 39, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,949,270 (Shima et al.) as applied to claim 1 above, and further in view of U.S. Patent No. 4,972,323 (Cauwet). Shima et al. teaches the aspects of the claimed invention as set forth in the above rejection based thereon. Regarding claim 13, Shima additionally teaches the cutting of “humanly recognizable” shapes or images (see Figure 16, for example). However, Shima et al. does not teach varying the depth of cut, nor using a

Art Unit: 3722

laser engraving tool, and regarding claim 39, is silent as to how many pockets are being machined in a particular workpiece. Cauwet teaches the use of an engraving tool having three axes of movement (column 1, lines 22-25) to vary the depth of cut (column 14, lines 3-17) and to set multiple tooling passes ("one or more further engraving steps" as claimed in claim 12) (see column 14, lines 34-36) in a flat plate workpiece (column 2, lines 5-6). Cauwet also teaches that the engraving tool can be a milling cutter or laser, with the specific type of engraving tool used being dependent on the material of workpiece used (column 2, lines 50-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have varied the depth of cut, as taught by Cauwet, in the cutting process taught by Shima et al. for the purpose of being able to engrave images of a higher complexity (Cauwet, column 2, lines 15-20) into the flat workpiece taught by Shima et al. It would also have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized a laser engraving tool, as taught by Cauwet, to engrave a workpiece with the engraving method taught by Shima et al, for the purpose of being able to engrave workpieces made of materials that are not suitable for engraving with a rotary engraver (Cauwet, column 2, lines 50-55). Regarding the number of pockets or contours that are machined, such would be an obvious design choice of the end user, i.e., it is within the level of ordinary skill to determine how many and at what depth of pockets are produced, particularly since it is notoriously well-known in the art of printing to vary the depth of such pockets for the purpose of shading different portions of an image produced thereby in different ways.

11. Claims 21 and 22, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,949,270 (Shima et al.) as applied to claims 1 and 12 above,

Art Unit: 3722

and further in view of U.S. Patent No. 4,972,323 (Cauwet) as applied to claims 1 and 12 above, and further in view of U.S. Patent No. 2,210,923 (Jacquerod et al.). Shima et al. in view of Cauwet teaches all aspects of the invention as claimed in claims 21 and 22 as set forth in the above rejection of claim 12 based thereon, but does not teach different precisions of engraving tools. Jacquerod et al. teaches an flat intaglio printing plate that has a large removed area 11 in a surface of the plate 10 in a desired shape contour. Jacquerod also teaches finer removed areas 11a, which as shown in Figure 3, appear to be on sloping flanks of the desired contour. At the time that Jacquerod's invention was made (patented 1940), the available technology to engrave the finer removed areas 11a was not practical (page 1, left column, lines 9-24). However, with the technology set forth in Shima et al. in view of Cauwet, the technology to engrave these finer areas with a smaller tool than was used to engrave the larger contour was practical at the time the present invention was made. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have substituted the intaglio printing plate with removed areas of differing precision taught by Jacquerod et al. for the flat workpiece taught by Shima et al. in view of Cauwet, and thus to have used the cutting methods and tools taught by Shima et al. in view of Cauwet to machine the areas of differing precision in order to be able to quickly and precisely remove the desired area from the intaglio printing plate.

12. Claim 42, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 2,210,923 (Jacquerod) as applied to claims 24 and 28 above, or in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 2,210,923 (Jacquerod et al.) in view of U.S. Patent No. 4,972,323 (Cauwet) as applied to claims 24 and 28 above.

Jacquerod or alternatively, Jacquerod in view of Cauwet, teaches all aspects of the claimed invention as described in the above rejection based thereon, but only specifically shows one depression (in the shape of the numeral “one”) rather than plural or multiple depressions.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided as many of the depressions having the described micro-engraving and roughness structures as was desired or expedient, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Response to Arguments

13. Applicant's arguments filed July 22, 2002 have been fully considered but they are not persuasive. Many of Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection, and accordingly, applicant's attention is directed to the above rejections. However, Examiner will address those arguments which still pertain.

Applicant has made a number of assertions (found in section number 5 of the response filed 7/22/02, pp. 6-10) with respect to the rejection of claims 24-25, 28-33, and 41 based on U.S. Pat. No. 2,210,923 (Jacquerod) or alternatively based on the combination of Jacquerod and U.S. Pat. No. 4,972,323 (Cauwet). Primarily, Applicant is asserting that the etched dimple structures taught by Jacquerod do not constitute the “engraved defined roughness structure” because these etched structures have a different structure than would an “engraved” structure. Applicant further asserts that:

Etching is a clearly a chemical process involving acid. Engraving is a mechanical process.

Applicant further provides the following definitions from *Webster's Ninth Collegiate Dictionary*:

Art Unit: 3722

¹*etch... 1 a: to produce esp. on metal or glass by the corrosive action of an acid
b: to subject to such etching*

²*etch... 1 a: the action or effect of an etching acid on a surface
engraving... 1 a: to form by incision (as on wood or metal) b: to impress deeply as if
with a graver ("graver" being defined as "1: SCULPTOR ENGRAVER 2: any of various
cutting or shaving tools used in graving or in hand metal-turning").*

However, this is not persuasive. It is noted that *Merriam-Webster's Collegiate Dictionary, 10th ed.* provides a broader definition of the term "etch" than one merely limited to corrosive action by an acid. Specifically, *Merriam-Webster's Collegiate Dictionary, 10th ed.* defines etch as follows:

¹*etch... 1 a: to produce (as a pattern or design) on a hard material by eating into the material's surface (as by acid or laser beam)*

It is noted that producing a pattern or design in a surface via a laser, encompassed by the definition of "etch" shown above from the *Merriam-Webster's Collegiate Dictionary, 10th ed.*, is a mechanical process, and thus Applicant's arguments that the structures taught by Jacquerod are somehow structurally different from the claimed "engraved defined roughness structure" because "etching" is a chemical process and "engraving" is a mechanical process are not persuasive. Further note that "eating into the material's surface (as by acid or laser beam)" would be encompassed by definition 1a of "engraving" as provided by Applicant.

Applicant additionally asserts that the structures taught by Jacquerod differ from the claimed "engraved defined roughness structure" because of the use of the term "defined". Specifically, Applicant states (p.6, indented section numbered 1) that the "Jacquerod patent discloses an etched roughness structure which is **random** rather than defined". However, it is

Art Unit: 3722

noted that the structures taught by Jacquerod each have an edge delimiting their location, and are each thus “defined”, and thus encompassed by the current claim language.

Applicant has additionally asserted that any “alignment” of the etched structures shown by Jacquerod “could never happen in practice, and cannot be considered to be ‘defined’ as claimed”. Firstly, the issue of the breadth of the term “defined” has already been addressed above, and that there has been no language provided in the claims to distinguish the “defined” structures taught by Jacquerod from those in claim 24, for example. Note that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Secondly, counsel’s statements regarding the impossibility of such an alignment are not factually supported, and appear to be speculative in nature. Note that the arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). See also MPEP section 716.01(c), for example.

Furthermore, Applicant has asserted that Jacquerod “teaches away” from the presently-claimed invention because Jacquerod’s etched method results in random rather than defined roughness structures. Again, there is no language in independent claim 24 that would preclude the structures taught by Jacquerod which have “defined” edges from being considered as “defined”, whether or not they are of random layout. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding the 103 portion of the above-mentioned rejection, Applicant has asserted that:

The Cauwet patent does not include any teachings that would have caused the ordinary artisan to ignore the teachings of Jacquerod concerning etching, and in particular does not

Art Unit: 3722

in any way suggest the claimed feature of *engraved* defined roughness structures in an *engraved* depression, as claimed. Certainly, neither Cauwet nor Jacqueroed even remotely considered the possibility of engraving roughness structures into an engraved depression for the purpose of facilitating numerical control and reproducibility of plate formation, and there are no other reasons apparent in either of the references that would have caused the ordinary artisan to make the proposed combination.

Firstly, it appears that Applicant is asserting that Jacqueroed is somehow teaching away from utilizing the engraving tools taught by Cauwet (i.e., “that would have caused the ordinary artisan to ignore the teachings of Jacqueroed concerning etching...”). However, it is unclear specifically to what Applicant is referring. Note that the incised “one” shape taught by Jacqueroed is “incised”, which by Applicant’s own definition is a form of engraving. As outlined above, there is also no language in the claim that precludes the etched structures taught by Jacqueroed from being considered “engraved structures”. Furthermore, Jacqueroed also teaches that it is known to use “mechanical” cross hatching (page 1, left column, lines 10-24) to bring in a sub- or roughness structure, as described in the above rejection, and that this mechanical process is a known way of bringing in the roughness structures in the base of the incision. Jacqueroed further teaches (page 1, left column, lines 20-24) that:

However such mechanical treating of the plate is very expensive. It requires the labor of a skilled engraver who is required to put in many hours of work to cross-hatch even a small area.

Note that this is not the same as teaching away from mechanically placing the pattern using a machine, per se, but instead teaches against mechanical treatment utilizing a *skilled engraver* (emphasis added), and as numerically controlled machines were not around in 1940 when the Jacqueroed invention was patented, a skilled engraver who is manually performing the described slow process of cross hatching. Cauwet teaches that it is desired to utilize an *automatic* (emphasis added) engraver so that special operator skill is not required (col. 1, lines

Art Unit: 3722

40-50 and col. 2, lines 14-20). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, furthermore, as set forth in the rejection in question, Cauwet teaches that it is known to use a "milling cutter, engraving chisel, laser emitter, electro-erosion tool, etc." in an automatic engraver such that the tool chosen is suitable to the material being engraved (col. 2, lines 50-55, col. 1, lines 14-18), and the reasoning for utilizing an automatic engraver has already been outlined above.

Applicant has made several assertions regarding the rejection of claims 24-25, 28-33, and 41 over U.S. Pat. No. Re. 28,747, (Graboyes) and/or claims 32-33 in view of Graboyes in view of Cauwet.

Firstly, Applicant has asserted that "Graboyes concerns engraving of a printing wheel and not an embossing or intaglio plate". However, as set forth in the above rejection based thereon, the printing wheel taught by Graboyes has platforms or plate portions 80 (Figures 3-4, and that there is no reason why the depression portion of the plate 80 of the Graboyes printing wheel could not be filled with ink and thus used as an intaglio plate.

Secondly, Applicant has asserted that the engraved depressions taught by Graboyes do not have "defined roughness structures at the bottom of the engraved depressions, but to the contrary serve the precise forming of the radius of the inside corner of the depression" and also

Art Unit: 3722

asserts that “[t]he bottom of the engraved depression designated with the reference numeral 112 in Graboyes is always flat and smooth.” This is not persuasive. It is noted that at various points in time, the plates 80 taught by Graboyes include “roughness structures” between the tool tracks as described in the above rejection based thereon (see Figures 8-23), thus meeting the present claim language. Applicant has additionally stated that the “formation of roughness structures in the printing wheel of Graboyes would actually degrade its performance”. However, this is not persuasive, since Graboyes *teaches* the claimed roughness structures.

Furthermore, Applicant appears to be asserting the Graboyes could not be used as an intaglio printing plate because “in intaglio printing plates, the depressions rather than the raised surfaces are filled with printing inks”. It is noted that the above rejection states that there would appear to be no reason why the depression, i.e., the area inside the raised portion 116 shown in Figure 7, could not be filled with ink. Applicant has not provided any reasoning why the device could not be so used.

In response to applicant's arguments against the references individually, e.g., Applicant's statement that “Cauwet merely teaches choices of engraving tools that could be used in the printing method of Graboyes, and does not suggest the claimed, defined, engraved structures at the bottom of depressions” and the statement that Cauwet “does not suggest modifying a letter printing plate to include roughness structures at the bottom of depressions”, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is noted that Cauwet was not relied upon to teach the roughness structures. Additionally, it appears that Applicant may be

Art Unit: 3722

asserting that the roughness structures taught by Graboyes are not located at the “bottom” of the depression. However, this is not persuasive. As viewed in, for example, Figure 13 of Graboyes, note that the projection 134 is located at the “bottom” of the depression as the “bottom” includes surface portions labeled as 128, 132, and 112 as viewed in Figure 13.

In response to applicant's argument that the references fail to show certain features of applicant's invention (p. 11 of response), it is noted that the features upon which applicant relies (i.e., that the roughness structures are “designed to retain printing ink”) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding applicant's assertions with respect to the rejection of claims 1-10, 12-14, 16-18, 21, 22, and 37-40 over Graboyes and of claim 15 over Graboyes in view of Cauwet, firstly, Applicant has asserted that the roughness structures taught by Graboyes are not located at the “bottom” of the depression. However, this is not persuasive. As viewed in, for example, Figure 13 of Graboyes, note that the projection 134 is located at the “bottom” of the depression as the “bottom” includes surface portions labeled as 128, 132, and 112 as viewed in Figure 13.

Applicant has also asserted that the fact that the roughness structures taught by Graboyes are subsequently removed somehow serves to distinguish between the presently-claimed invention and that taught by Graboyes. However, this is not persuasive. At some point in time, Graboyes teaches the structures. True, Graboyes' method provides additional steps. However, the open claim language “comprising” encompasses further steps, including the steps of removing the structures.

Art Unit: 3722

Applicant has made a number of assertions regarding the rejections of claims 1-3, 5-11, 14, 16-18, 20, 36, and 37 over U.S. Pat. No. 4,949,270 (Shima et al.), claims 4, 12, 13, 15, and 39 based on Shima et al. in view of Cauwet, and claims 21-22 based on Shima et al. in view of Cauwet and Jacquerod.

Firstly, Applicant has asserted that Shima does “not involve cutting out the outline before cutting the remainder”. However, it is noted that no step involving “cutting out the outline before cutting the remainder” is recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Note that claim 1 merely sets forth the steps of “defining a limited partial area of the surface, an edge of the limited partial area defining a desired contour”, “calculating a tool track followed by the engraving tool within the desired contour” and “controlling the movement of the engraving tool along said tool track such that a material of said partial area is removed within the desired contour”. Note that neither the claimed “defining” nor the claimed removing of material “within the desired contour” are the same as “cutting an outline” prior to cutting “the remainder”.

Applicant has also asserted that “[t]he reason is that Shima does not concern intaglio printing and the considerations that apply to the claimed invention, as discussed above, do not apply to the method of Shima”. As best understood, it appears that Applicant is asserting the Shima is non-analogous art. However, it has been held that a prior art reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this

Art Unit: 3722

case, both Shima and the present invention are in the field of pocket machining, and both are concerned with the problem of removing material from a depression or pocket from a plate-like workpiece.

It appears that Applicant is asserting that Shima does not teach the presently-claimed invention because the tool path shown in Figure 16 is not available in the prior art. However, firstly, it is noted that the fact that Shima states that such a tool path was not possible with the **prior art** (emphasis added) does not mean that Shima's method is not possible of creating such a tool path. It is also noted that Figure 16 was not the only figure relied upon in the Shima patent to teach the tool paths of the presently-claimed invention. See the above rejections based thereon, which also specifically described the Figures 13b and 13c.

Additionally, Applicant is asserting that Shima's method is "contrary to that of the claimed invention, according to which the tool track is not calculated on the basis of certain positions which must be passed by the tool, but exclusively on the basis of a predetermined outer contour and a predetermined penetration depth". Firstly, it is noted that the features upon which applicant relies (i.e., that the tool track is calculated "exclusively on the basis of a predetermined outer contour and a predetermined penetration depth") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Note that the use of the open language "comprising" in the present claims includes other steps not set forth in the claim. Secondly, it is noted that the present invention seems to take other things into account than just the shape of the pocket to be machined and the depth thereof when calculating a tool track, such as the type of tool, the size of the tool, as well as the specific

Art Unit: 3722

type of material removal method (i.e., Figure 5b vs. Figure 5c), etc. Also note that regardless of whether or not Shima's method involves the step of specifying points, the outer contour inherently must be taken into consideration, i.e., "defined" as set forth in claim 1, when machining a pocket shape of desired contour as taught by Shima. Note also that Shima specifically teaches inputting or "defining" the profile outline POL, and thus the desired contour (col. 2, lines 40-48).

Additionally, Applicant has asserted that Shima's method is based "not at all on the penetration depth". Firstly, it is noted that Shima's pocket machining programs are transferred to NC control section 12 in order to perform the pocket machining operation (col. 4, lines 44-47). Inherently, if a pocket is being machined via the pocket machining program, that program, and thus the calculated tool track, must include a depth of cut in order for the program to ever be executed. Otherwise, no pocket could ever be machined. Secondly, it appears that Applicant is asserting that Shima's statement (col. 1, lines 13-15) that it is known to use the techniques shown in Figures 13a-13c to machine a pocket at a predetermined depth somehow preclude the use of that knowledge of producing a pocket at a predetermined depth with Shima's method. This is not persuasive, as there are no such statements in the Shima reference that would "teach away" from machining a pocket at a "predetermined depth", and is also not persuasive as again, it is considered inherent that to produce a desired pocket, the program must include a depth of cut.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 3722

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica E Cadugan whose telephone number is (703) 308-6395. The examiner can normally be reached on M-F, 7:30 a.m. to 5:00 p.m., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea L. Wellington can be reached on (703) 308-2159. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

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October 18, 2002


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